UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/449,697	11/24/1999	PRABHAKAR RAGHAVAN	AM9990203	6589

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EXAMINER
LUDWIG, MATTHEW J

ART UNIT	PAPER NUMBER
2178	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/449,697	RAGHAVAN ET AL.
	Examiner	Art Unit	
	Matthew J. Ludwig	2178	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _14 May 2004_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,3-14,16-27 and 29-39_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,3-7,14,16-20,27 and 29-33_ is/are rejected.

7)☒ Claim(s) _8-13, 21-26, 24-39_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to communications: amendment C filed 5/4/04.

2.   Claims 1, 3-14, 16-27, 29-39 are pending in the case. Claims 1, 14, and 27 are

independent claims. Claims 2, 15, and 28 have been cancelled according to amendment A.

3.   Claims 1-7, 14-20, and 27, 29-33 remain rejected under 35 U.S.C. 103(a) as being

unpatentable over Dean. The rejection of claims 8-12, 21-25, and 34-38 remain rejected under 35

U.S.C 103(a) as being unpatentable over Dean in view of Chakrabarti.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102
of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject
matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art
to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1, 3-7, 14, 16-20, and 27, 29-33 are rejected under 35 U.S.C. 103 as being

unpatentable over Dean et al., US Patent Number 6,321,220 filed (12/7/98) in view of Wical,

USPN 6,460,034 filed (5/21/97).

In reference to independent claim 1, Dean discloses:

Pages may be directly linked to other pages or indirectly linked via intermediate pages.

Pages that are directly linked are considered to be close pages and pages that are linked via

numerous intermediate pages are considered to be distant pages. See column 2, lines 50-60. The

reference demonstrates first and second sets of pages when it states the use of directly and

indirectly linked sets of pages.

The reference discloses links, which define the connectivity of the pages and may be expressed as a graph where the pages are represented as nodes and the links are represented as directed edges. See column 2, lines 57-59. Dean further teaches connectivity information, which is useful for increasing the size of the result set. See column 2, lines 65-67. This method demonstrates a similar technique for expanding pages of common interest into a subset.

The enlarged result set taught by Dean, which is called a neighborhood graph, is a subset of the web graph. A neighborhood graph expresses the connectivity of pages that are located a predetermined distance away from a particular page or a result set.

Providing a query to a search engine, wherein the query is associated with a predetermined topic; retrieving at least one page associated with the query. See column 3, lines 50-59. The query demonstrates the utilization of input within the web environment and the return of multiple pages or sites within a web environment, which include hyper-linked pages.

By processing the results of the query, it may be determined which of the nodes in the expanded graph did not match the original query terms, and the non-matching nodes may be eliminated from the graph. This filtering method may be applied to all of the nodes in the graph. See column 5, lines 55-67. This method of eliminating pages demonstrates the removal of pages. The reference does not explicitly teach removing the hyper-links *between any two pages on a same site*; however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the elimination method taught by Dean to eliminate hyper-links between any two pages on a same site, because it would have a more proficient technique for matching groups of pages of general interest.

Dean does not explicitly disclose expanding each identified core into a full community; however, Wical discloses a knowledge base used to identify terminology that has a lexical, semantic, or usage association with the query terms. The categorization methods taught by Wical provide the technique of expanding a basic query to include additional documents potentially selected based on themes common to both the original document set and the additional documents selected. See column 3, lines 1-15 and column 4, lines 30-63. The claim language does not preclude the Examiner from utilizing a search query for teaching the expanding identified core (search query) into a full community (sense associations relating terminology to topics or categories) as stated within the claim's limitations. It would have been obvious to one of ordinary skill in the art, having the teachings of Dean and Wical before him at the time the invention was made, to modify the hyperlink methods taught by Dean to include the expansion of a search query into multiple sense categories of Wical, because the classification criteria that identifies topics would have provided improved ranking of pages in a result set so that just pages related to a particular topic are identified.

In reference to dependent claim 3, Dean discloses:

Nodes that are not on topic are discarded. Otherwise, the nodes remain in the graph. See column 5, lines 43-4.

In reference to dependent claim 4, Dean discloses:

The results are ordered by taking by taking the top few rated pages from each component and using them to construct a final ordered list of ranked pages. By choosing nodes that have a lower absolute authority score but are the best ranked pages in a component, the problem of

choosing all the highest ranked nodes from a single component simply because that component

was the largest component on the graph is avoided. See column 18-26.

In reference to dependent claim 5 & 6, Dean discloses:

Each page may have hyperlinks pointing to other pages, and each page may be pointed to

by the hyperlinks of other pages. See column 2, lines 50-53. The pages described by the

reference are not explicitly fan pages and candidate pages; however, it would have been obvious

to one of ordinary skill in the art at the time the invention was made to have utilized the

hyperlinks taught by Dean to discard unnecessary pages from consideration to generate sets of

pages for a well-organized group of similar pages.

In reference to dependent claim 7, Dean discloses:

Pages that are close to each other tend to contain related topics. Each page may have

hyperlinks pointing to other pages, and each page may be pointing to by the hyperlinks of other

pages. See column 2, lines 50-67.

In reference to claims 14, and 16-20, the claims are the computer program product for carrying

out the methods of claims 1, and 2-7 respectively and therefore are rejected under similar

rationale.

In reference to claims 27, and 29-33, the claims recite the system for carrying out the methods of

claims 1, and 2-7 respectfully and therefore are rejected under similar rationale.

Response to Arguments

6.   Applicant's arguments with respect to claims 1, 3-14, 16-27, 29-39 have been considered

but they are not persuasive.

Applicant argues on pages 2-4 of the amendment that the reference does not teach or suggest the limitations of the claims. Applicant further states that Dean fails to disclose a scheme for pre-identifying implicitly defined communities including group of pages of common interest, from a collection of hyperlinked pages, wherein the communities have not been previously identified. The Examiner respectfully notes the ambiguous nature of the claim limitations and will set out, within this response, to illustrate the broadness of the independent claim. Because the claim limitations are to be given their broadest reasonable interpretation within the scope of the art, the limitations when read as whole could be interpreted numerous ways by one of ordinary skill in the art. The Examiner notes, within independent claim, the limitations, (1) *"wherein each of the identified community cores includes first and second sets of pages, wherein each page in the first set pointes to every page in the second set"*, (2) *"removing the hyper-links between any two pages on a same site"*, and (3)*"expanding each identified core into a full community, the full community"* lack coherency when read as whole. Furthermore, a the lack of sufficient elements illuminates a gap between the above-mentioned limitations and therefore, could be interpreted in different ways by one of ordinary skill in the art. The claim limitations disclose a *'collection'*, which includes a plurality of sites with each site having one or more hyper-linked pages. The claim then recites a *'community core'*, which is a distinct entity from the *'collection'*. The *'community core'* includes first and second sets of pages. Each page in the first set points to every page in the second set. It is unclear what the limitation, *'removing the hyper-links between any two pages on a same site'* is referring to. Two pages on a same site, fails to disclose what site of the plurality of sights mentioned in the previous limitation, it might be removing. Finally, it is unclear as to where the resultant subset of pages derives from. The

limitation itself demonstrate a disconnect from the rest of the limitations within the claim. Pages may be directly linked to other pages or indirectly linked via intermediate pages. Pages that are directly linked are considered to be close pages and pages that are linked via numerous intermediate pages are considered to be distant pages. See column 2, lines 50-60. The reference demonstrates first and second sets of pages when it states the use of directly and indirectly linked sets of pages.

The reference discloses links, which define the connectivity of the pages and may be expressed as a graph where the pages are represented as nodes and the links are represented as directed edges. See column 2, lines 57-59. Dean further teaches connectivity information, which is useful for increasing the size of the result set. See column 2, lines 65-67. This method demonstrates a similar technique for expanding pages of common interest into a subset. By processing the results of the query, it may be determined which of the nodes in the expanded graph did not match the original query terms, and the non-matching nodes may be eliminated from the graph. This filtering method may be applied to all of the nodes in the graph. See column 5, lines 55-67. This method of eliminating pages demonstrates the removal of pages. The reference does not explicitly teach removing the hyper-links *between any two pages on a same site*; however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the elimination method taught by Dean to eliminate hyper-links between any two pages on a same site, because it would have a more proficient technique for matching groups of pages of general interest. Dean does not explicitly disclose expanding each identified core into a full community; however, Wical discloses a knowledge base used to identify terminology that has a lexical, semantic, or usage association with the query terms. The

categorization methods taught by Wical provide the technique of expanding a basic query to include additional documents potentially selected based on themes common to both the original document set and the additional documents selected. See column 3, lines 1-15 and column 4, lines 30-63. The claim language does not preclude the Examiner from utilizing a search query for teaching the expanding identified core (search query) into a full community (sense associations relating terminology to topics or categories) as stated within the claim's limitations. It would have been obvious to one of ordinary skill in the art, having the teachings of Dean and Wical before him at the time the invention was made, to modify the hyperlink methods taught by Dean to include the expansion of a search query into multiple sense categories of Wical, because the classification criteria that identifies topics would have provided improved ranking of pages in a result set so that just pages related to a particular topic are identified. The Examiner respectfully notes that without a clear and concise order of operations the community identification methods as claimed do not preclude the Examiner from utilizing a means utilizing query methods as taught by Dean.

Allowable Subject Matter

7.   Claims 8-13, 21-26, 34-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

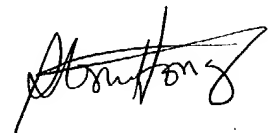## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Ludwig whose telephone number is 703-305-8043. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached on 703-308-5186. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

ML
August 27, 2004

STEPHEN S. HONG
PRIMARY EXAMINER